ENSR

ENSR Consulting
and Engineering
4500 Park Glen Road
Suite 210
St. Louis Park, MN 55416
(612) 924-0117
(612) 924-0317/FAX

July 23, 1993

ENSR Ref. No: 1620-013-600
ENSR Doc. No: 93191pm

Mr. James N. Grube
Director of Public Works
City of St. Louis Park
5555 Minnetonka Boulevard
St. Louis Park, MN 55466

Re: Work Plan for Sampling Coal Tar/Creosote-Impacted Soils

Dear Jim:

Per your request, ENSR is pleased to submit this work plan to collect additional soil samples from approximately 400 cubic yards of coal tar/creosote-impacted soil excavated in 1991 during the Trunk Highway 7 (TH7)/Louisiana Avenue Interchange construction project. The purpose of this project is to characterize the soil and arrange for its subsequent disposal. We anticipate treating the soil at a Northern States Power (NSP) facility in the Twin Cities area.

BACKGROUND AND PREVIOUS SAMPLING RESULTS

The City of St. Louis Park (City) encountered coal tar/creosote-impacted soils during construction of the above-mentioned intersection. Impacted soils encountered during that project were excavated and stored under impervious cover in a security area pending disposition.

The impacted soils resulted from the nearby operations at the Reilly Site. Reilly was a coal tar distillation/wood preserving plant which ultimately impacted a swamp immediately south of the site. The former swamp area is now the location of the interchange where the impacted soils were excavated.

During September 1991, the City collected a representative sample of the coal tar/creosote-impacted soils and submitted the sample to Interpoll Laboratories, Inc., for analysis. The sample was analyzed for hazardous waste characteristics, for toxicity characteristic leachate procedure (TCLP) for metals, polynuclear aromatic hydrocarbons (PAHs), and for volatile organic compounds (VOCs). Laboratory results indicate the sample was nonhazardous (Attachment 1).

In August 1992, the City collected eight soil samples from the four soil piles (two samples from each pile) for waste characterization per NSP's guidelines for accepting soils to be incinerated. Laboratory results (Attachment 2) indicate that the soil meets NSP's guidelines for accepting the soil for incineration.

During a previous sampling event (July 1991), two samples and one duplicate were collected as composite samples from the soil piles, and were analyzed for total PAH. The results indicate total PAH concentrations ranging from approximately 2500 to 8200 parts per million (ppm) (Attachment 3).

The soil sampling results to date generally indicate that the soil is nonhazardous and is suitable for treatment by incineration at an NSP facility. However, additional sampling is necessary to provide a consistent and complete characterization database representative of the entire 400 cubic yard volume of soil. The purpose of this work plan is to provide samples for complete characterization of the soil, in accordance with NSP and MPCA requirements, to obtain approvals for disposal, as planned.

SCOPE OF WORK

The overall sampling strategy will be to collect one composite sample for each 100 cubic yards of soil, for a total of four samples. The impervious plastic sheeting will be removed from the existing soil piles to allow for this sampling activity. A front-end loader will then be used to create four distinct soil piles, each of which will contain approximately 100 cubic yards of soil. this will allow better control of the soil, if a portion of the sample analytical results indicate disposal restrictions.

The composite samples will be collected from hand-auger borings taken in the four quadrants of each soil pile. Each boring will originate at the approximate mid-height of the soil pile and terminate at a depth of approximately 2 feet. Sample aliquots from the 2-foot depth will be placed in a stainless steel bowl for mixing and compositing. Mixing and distribution to sampling containers will be accomplished using a stainless steel spatula. All sampling equipment will be decontaminated between samples by scrubbing with a detergent water, and rinsing with deionized water.

The samples will be transported to Interpoll Laboratories in circle Pines, Minnesota, for analysis. Labeling and chain-of-custody procedures, which are consistent with ENSR's standard operating procedures, will be followed. The analyses will include:

- Heat value
- Ash content
- Total moisture
- pH
- Lead
- Selenium
- Silicon
- Total fluorine
- Chlorine
- Bromine
- Fixed carbon
- Volatile matter
- Total polychlorinated biphenyls (PCBs)
- TCLP metals
- TCLP organics (volatiles and semivolatiles)

HEALTH AND SAFETY

The Reilly Site Health and Safety Plan will cover all work on this project.

SOIL DISPOSAL

Upon receipt of the analytical data for this project, NSP's Material Characterization Sheet (Attachment 4) will be completed and submitted to NSP for review. Following NSP's review, a brief report will be prepared to document the soil characterization results for MPCA and to request approval for treating this soil at a NSP facility in the Twin Cities area.

Based on recent history, the Allen S. King facility in Bayport, Minnesota, may be a poor choice for treating these soils due to public opposition to treating Minnegasco soils. Although the King plan is the only facility currently permitted to accept this type of material, NSP expects to re-permit two other area plants including the Black Dog facility in Burnsville, Minnesota. The Black Dog facility is the most likely choice for treatment once permitting is completed. It is hoped that this can be accomplished pursuant to either:

- The conditions of the new permit for alternate fuels, or
- Special approval for a one-time handling of the soil

Details on the selection of the NSP facility and on obtaining all necessary approvals for treatment in this manner will be identified pending successful completion of this sampling/analysis work plan.

If you have any questions regarding this work plan, please contact me.

Sincerely,

William M. Gregg
General Manager

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

October 25, 1991

City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416-2290

Attention: Jim Grube

LABORATORY REPORT: #4295

SAMPLES COLLECTED: September 20, 1991
SAMPLES RECEIVED: September 20, 1991

Sample Identification:	S-1
Sample Type:	Soil
Laboratory Log Number:	4295-01

Parameter	Units	Method	Target Detection Limit	
Alkalinity	mg/Kg	EPA 310.1	25	8900[a]
pH		EPA 150.1		7.9[b]
Free cyanide	mg/Kg	4500-CN I[c]	0.2	< 0.2
Total solids	%	EPA 160.3	3	69
Reactive sulfide	mg/Kg	(d)	10	13
Free liquids		SW-846, 9095		*
Total chlorine	% w/w	(e)	0.005	0.02
Flashpoint	^{0}F	ASTM D93	2	> 200
Bulk density	LB/FT^3	Gravimetric		79.17
Total PCB	mg/Kg	SW-846, 8080	0.0033	<0.0033

*Contains no free liquids.

Sample Identification:	S-1
Sample Type:	Soil
Laboratory Log Number:	4295-01

Parameter	Units	EPA Method	Target Detection Limit		
TCLP Leachate:					
Phenol	mg/L	EPA 420.1	0.004		0.11
Arsenic	mg/L	SW-846, 6010	0.1	<	0.1
Barium	mg/L	SW-846, 6010	0.01		1.3
Cadmium	mg/L	SW-846, 6010	0.01	<	0.01
Chromium	mg/L	SW-846, 6010	0.01	<	0.01
Lead	mg/L	SW-846, 6010	0.03		0.07
Mercury	mg/L	SW-846, 7470	0.0002		<0.0002
Selenium	mg/L	SW-846, 6010	0.1	<	0.1
Silver	mg/L	SW-846, 6010	0.1	<	0.1
Copper	mg/L	SW-846, 6010	0.01	<	0.01
Nickel	mg/L	SW-846, 6010	0.01		0.01
Zinc	mg/L	SW-846, 6010	0.01		1.6
TCLP Leachate:					
o-Cresol	ug/L	SW-846, 8270	4.5		17
m+p-Cresol	ug/L	SW-846, 8270	4.5		41
2,4-Dinitrotoluene	ug/L	SW-846, 8270	13	<	13
Hexachlorobenzene	ug/L	SW-846, 8270	9.5	<	9.5
Hexachlorobutadiene	ug/L	SW-846, 8270	14	<	14
Hexachloroethane	ug/L	SW-846, 8270	6.0	<	6.0
Nitrobenzene	ug/L	SW-846, 8270	7.0	<	7.0
Pentachlorophenol	ug/L	SW-846, 8270	14	<	14
2,4,5-Trichlorophenol	ug/L	SW-846, 8270	8.0	<	8.0
2,4,6-Trichlorophenol	ug/L	SW-846, 8270	9.5	<	9.5

Sample Identification: S-1
Sample Type: Soil
Laboratory Log Number: 4295-01

Parameter	Units	EPA Method	Target Detection Limit		
TCLP Leachate:					
Benzene	ug/L	SW-846, 8240	1.0	<	2.0
Carbon tetrachloride	ug/L	SW-846, 8240	1.7	<	3.4
Chlorobenzene	ug/L	SW-846, 8240	1.0	<	2.0
Chloroform	ug/L	SW-846, 8240	1.0	<	2.0
1,4-Dichlorobenzene	ug/L	SW-846, 8240	1.0	<	2.0
1,2-Dichloroethane	ug/L	SW-846, 8240	1.3	<	2.6
1,1-Dichloroethene	ug/L	SW-846, 8240	1.6	<	3.2
Methyl ethyl ketone	ug/L	SW-846, 8240	10	<	20
Pyridine	ug/L	SW-846, 8240	2000	<	4000
Tetrachloroethene	ug/L	SW-846, 8240	8.0	<	16
Trichloroethene	ug/L	SW-846, 8240	2.1	<	4.2
Vinyl chloride	ug/L	SW-846, 8240	1.6	<	3.2
Dilution factor					2[f]

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

for Wayne A. Olson, Manager
Organic Chemistry Group

JFO/WAO/cg
Invoice Enclosed
< = less than
> = greater than

[a]Soil alkalinity measured in water.
[a]Soil pH measured in water.
[c]Standard Methods, 17th Edition.
[d]EPA Method SW-846, Chapter 7, Section 7.3.4.2.
[e]Digestion by oxygen parr bomb; analysis by ion chromatography.
[f]Sample extract was diluted by a factor of 2 due to matrix interferences. Reported values represent the concentration in the original undiluted sample, i.e., instrumental results were multiplied by the dilution factor prior to reporting. Target detection limits are given. The detection limit applicable to the sample may be obtained by multiplying the detection limit by the dilution factor.

All analyses were performed using EPA or other recognized methodologies.
All units are on an "as received" basis unless otherwise indicated.

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

August 24, 1992

City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, Minnesota 55416

Attention: Jim Grube

LABORATORY REPORT: #6578
ILI QUOTATION: #920713JF001

SAMPLES COLLECTED: July 23, 1992
SAMPLES RECEIVED: July 24, 1992

Sample Identification:				Stockpile #1	Stockpile #2
Sample Type:				Soil	Soil
Laboratory Log Number:				6578-01	6578-02
Parameter	Units	EPA Method	Target Detection Limit		
Lead	mg/Kg	SW-846, 6010	5	11	20
Selenium	mg/Kg	SW-846, 6010	20	< 20	< 20
Silicon	mg/Kg	SW-846, 6010	2	10	23
Total fluorine	mg/Kg	300.0	0.005	0.008	0.007
Total chlorine	mg/Kg	300.0	0.005	0.020	0.007
Total bromine	mg/Kg	300.0	0.010	< 0.010	< 0.010
Fixed carbon	mg/Kg	Calculation		4.81	12.36
Volatile matter	mg/Kg	ASTM D3175	0.1	7.64	9.61
Total PCB	mg/Kg	SW-846, 8080	0.0033	<0.0033	<0.0033

Interpoll Laboratories, Inc.
Laboratory Report #6578
City of St. Louis Park

Sample Identification:			Target Detection Limit	Stockpile #3 Soil	Stockpile #4 Soil
Sample Type:					
Laboratory Log Number:				6578-03	6578-04
Parameter	Units	EPA Method			
Lead	mg/Kg	SW-846, 6010	5	43	41
Selenium	mg/Kg	SW-846, 6010	20	< 20	< 20
Silicon	mg/Kg	SW-846, 6010	2	20	20
Total fluorine	mg/Kg	300.0	0.005	0.01	0.007
Total chlorine	mg/Kg	300.0	0.005	0.02	0.006
Total bromine	mg/Kg	300.0	0.010	< 0.010	< 0.010
Fixed carbon	mg/Kg	Calculation		12.69	16.84
Volatile matter	mg/Kg	ASTM D3175	0.1	11.34	13.01
Total PCB	mg/Kg	SW-846, 8080	0.0099	<0.0066[4]	<0.0099

Sample Identification:			Target Detection Limit	Stockpile #5 Soil	Stockpile #6 Soil
Sample Type:					
Laboratory Log Number:				6578-05	6578-06
Parameter	Units	EPA Method			
Lead	mg/Kg	SW-846, 6010	5	120	71
Selenium	mg/Kg	SW-846, 6010	20	< 20	< 20
Silicon	mg/Kg	SW-846, 6010	2	28	20
Total fluorine	mg/Kg	300.0	0.005	0.010	0.008
Total chlorine	mg/Kg	300.0	0.005	0.010	0.01
Total bromine	mg/Kg	300.0	0.010	< 0.010	< 0.010
Fixed carbon	mg/Kg	Calculation		20.62	18.56
Volatile matter	mg/Kg	ASTM D3175	0.1	16.42	13.88
Total PCB	mg/Kg	SW-846, 8080	0.0099	<0.0099	<0.0099

Interpoll Laboratories, Inc.
Laboratory Report #6578
City of St. Louis Park

August 24, 1992

Sample Identification:				Stockpile #7	Stockpile #8
Sample Type:				Soil	Soil
Laboratory Log Number:				6578-07	6578-08
Parameter	Units	EPA Method	Target Detection Limit		
Lead	mg/Kg	SW-846, 6010	5	74	70
Selenium	mg/Kg	SW-846, 6010	20	< 20	< 20
Silicon	mg/Kg	SW-846, 6010	2	25	20
Total fluorine	mg/Kg	300.0	0.005	0.01	< 0.005
Total chlorine	mg/Kg	300.0	0.005	0.01	< 0.005
Total bromine	mg/Kg	300.0	0.010	0.01	< 0.010
Fixed carbon	mg/Kg	Calculation		10.77	18.06
Volatile matter	mg/Kg	ASTM D3175	0.1	15.67	10.54
Total PCB	mg/Kg	SW-846, 8080	0.0099	<0.0099	<0.0099

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

Wayne A. Olson, Manager
Organic Chemistry Group

JFO/WAO/sk
Invoice Enclosed
< = less than

[a]The Total PCB detection limit for this sample is 0.0066 mg/Kg.

All analyses were performed using EPA or other recognized methodologies.
All units are on an "as received" basis unless otherwise indicated.

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-01-1971

Sample Identification: SOIL STOCKPILE #1

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			7.95
Ash		94.49	86.97
Sulfur	2.97	0.16	0.15
Heating Value, BTU/LB.	5416	299	275

Respectfully submitted,

Jeannie F. O'Neil

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-02-1972

Sample Identification: SOIL STOCKPILE #2

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			16.08
Ash		91.68	76.93
Sulfur	0.98	0.08	0.07
Heating Value, BTU/LB.	2637	219	184

Respectfully submitted,

Jeannie F. O'Neil

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-03-1973

Sample Identification: SOIL STOCKPILE #3

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			14.76
Ash		87.27	74.38
Sulfur	1.45	0.18	0.16
Heating Value, BTU/LB.	5519	703	599

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-04-1974

Sample Identification: SOIL STOCKPILE #4

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			21.79
Ash		87.51	68.44
Sulfur	1.03	0.13	0.10
Heating Value, BTU/LB.	6560	819	641

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-05-1975

Sample Identification: SOIL STOCKPILE #5

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			19.15
Ash		75.77	61.26
Sulfur	1.02	0.25	0.20
Heating Value, BTU/LB.	12953	3139	2538

Respectfully submitted,,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-06-1976

Sample Identification: SOIL STOCKPILE #6

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			17.90
Ash		80.39	66.01
Sulfur	1.10	0.22	0.18
Heating Value, BTU/LB.	9920	1945	1597

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-07-1977

Sample Identification: SOIL STOCKPILE #7

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			9.19
Ash		79.17	71.90
Sulfur	0.55	0.12	0.10
Heating Value, BTU/LB.	10628	2214	2010

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

INTERPOLL LABORATORIES INC.

Fuel Laboratory
(612) 786-6020

08-06-1992

Client: ENSR

Laboratory Log Number: 6578-08-1978

Sample Identification: SOIL STOCKPILE #8

Short Proximate Analysis WT %

Parameter	Moisture & Ash Free	Moisture Free	As Received
Moisture, Total			15.47
Ash		82.64	69.86
Sulfur	1.16	0.20	0.17
Heating Value, BTU/LB.	14908	2588	2188

Respectfully submitted,

Jeannie F. O'Neil, Manager
Inorganic Chemistry Group

NET Atlantic, Inc.
Thorofare Division

Data Summary Table

PAH Screen Results
St. Louis Park, MN

NET Lab ID	Client Id	Group 1 PAH ug/g dw	Group 2 PAH ug/g dw	Total PAH ug/g dw
	Instrument Blank	<1.0	<1.0	<1.0
71878	SP-1	704.5	1816.8	2521.3
71879	SP-1B	1059.5	1785.7	2845.2
71880	SP-2	3233.8	4975.1	8209.0

dry weight

QC Summary Table
Wet Weight Calculation

		Group 1 PAH	Group 2 PAH	Total PAH
71878	Original Result	570.0	1470.0	2040.0
	Duplicate Result	550.0	1800.0	2350.0
	RPD	3.6%	20.2%	14.1%

good QC #s

Northern States Power Company
Allen S. King Generating Plant
1103 King Plant Road, Bayport, Minnesota 55003
Telephone: (612) 731-5701 FAX: (612) 731-7305

MATERIAL CHARACTERIZATION SHEET

Has this waste been previously submitted to NSP-King to be burned? Yes ☐ No ☐ Renewal ☐

The following information is required to determine if your material can be safely burned as a nonhazardous material at NSP's Allen S. King Generating Plant in a SAFE, ECONOMICAL, and ENVIRONMENTALLY SOUND MANNER. To consider your material for burning, please include all available MSDS's and laboratory analysis when submitting the material characterization sheet for incineration. The material evaluation shall follow the requirements of Minnesota Rules 7045.0214, Evaluation of Wastes. After reviewing this information, we will:

(1) Accept your material as a nonhazardous material to be burned;
(2) Request further information/analysis; OR
(3) Reject your material for burning.

A. Generator Information:

Generator:_____
Address:_____
_____
_____
Technical Contact:_____
Telephone Number:( ) -_____

B. Material Disposal Contractor:

Company Name:_____
Address:_____
_____
_____
Company Contact:_____
Telephone Number:( ) -_____

C. MPCA Involvement:

Has this material been disclosed as a hazardous waste to either the MPCA or your county hazardous waste representative?:
Yes ☐ No ☐
Contact:_____
Telephone Number:( ) -_____
If this waste was generated from a spill, was the MPCA involved/notified of the clean up?: Yes ☐ No ☐
MPCA Spill Site I.D. Number:_____
Contact:_____
General Comments:_____
_____
_____
_____

D. General Material Characterization:

Material description:_____
_____
_____
How was material generated?_____
_____
_____
Frequency: One Time ☐ Continuous ☐
If one time, Quantity:_____
Container size:_____
Container description:_____
If more than one time, Quantity:_____
Frequency:_____
Container size:_____
Container description:_____

E. Physical Description:

Chemical Disposition: Organic ☐ Inorganic ☐
Physical State: Liquid ☐ Solid ☐ Semisolid ☐
Phase/Layering: Unilayer ☐ Bilayer ☐ Multilayer ☐
(%) Free Liquid:_____% (%) Total Solid:_____%
(%) Water (Mass %):_____
Odor:_____
Color/Appearance:_____

F. Physical Properties:

Actual Values ☐ Range ☐
Heat Value (Btu/lb)_____
Flash Point (°F)_____
pH:_____
Density (lb/ft³):_____
Viscosity (cp):_____ @ _____(°F)

G. Employee Hazards:

Fire Hazard (Flash Points):
Below 73°F____ Below 100°F____
Below 140°F____ Above 200°F____
Will not burn____
Reactivity:
May detonate____ Explosive____
Unstable____ Normally Stable____
Stable____
Special Hazards:
Water reactivity____ Oxidizer____
Radioactive____
Special Handling Requirements:_____
_____
_____

H. Chemical Composition by Mass (no trade names)

(Totals must add up to 100%; identify all constituents greater than 1%)

_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
_____ %
Total _____ %

I. Heavy Metals:

Test Classification: Total ☐ TCLP Leachate ☐
Units: mg/kg ☐ mg/liter ☐
Arsenic:_____
Barium:_____
Cadmium:_____
Chromium:_____
Lead:_____
Mercury:_____
Silver:_____
Selenium:_____
Other:_____

J. Halogens, Nitrogen and Sulfur:

Total weight % Halogens:_____ %
Chlorine:_____ % Bromine:_____ %
Fluorine:_____ % Iodine:_____ %
Total weight % Nitrogen:_____ %
Total weight % Sulfur:_____ %

K. Other Materials present. Check all that apply:

Asbestos:_____
Ash:_____
Benzene:_____
Non-combustibles:_____
Sludges:_____
Toluene:_____
Xylene:_____
Waste Oil:_____
Antifreeze:_____
Other:_____

L. Attachments:

Lab Analysis:_____
TCLP Leachate:_____
MSDS:_____
Other:_____

M. Certification:

As an authorized representative of the generator, I hereby certify that the information above, including attachments, are complete and accurate to the best of my knowledge and ability to determine and that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I agree to submit a new Material Characterization Sheet for burning should the process producing the waste change significantly or when requested by Northern States Power Company.

Authorized Signature:_____
Name (Type of Print):_____
Title:_____
Date:_____

Comments:_____

Please sign and date the certification. Keep a copy for your records and send the original material characterization sheet to:

Northern States Power Company
Fuel Resources Department
512 Nicollet Mall, 10th Floor
Minneapolis, Minnesota 55402
Telephone: (612) 330-7581
FAX: (612) 330-7671

In addition, please send a copy of the material characterization sheet to:

Northern States Power Company
Environmental and Regulatory Affairs Department
414 Nicollet Mall, 2nd Floor
Minneapolis, Minnesota 55401
Telephone: (612) 330-7873
FAX: (612) 330-6357

ENSR Consulting and Engineering

Alabama	Florence	(205) 740-8240
Alaska	Anchorage	(907) 276-4302
California	Los Angeles	
	Camarillo	(805) 388-3775
	Newport Beach	(714) 476-0321
	San Francisco	(415) 865-1888
Colorado	Fort Collins	(303) 493-8878
Connecticut	Hartford	(203) 657-8910
Illinois	Chicago	(708) 887-1700
Massachusetts	Boston	(508) 635-9500
Minnesota	Minneapolis	(612) 924-0117
New Jersey	Mahwah	(201) 818-0900
	New Brunswick	(908) 560-7323
Pennsylvania	Pittsburgh	(412) 261-2910
South Carolina	Rock Hill	(803) 329-9690
Texas	Dallas	(214) 960-6855
	Houston	(713) 520-9900
Washington	Seattle	(206) 881-7700
Puerto Rico	San Juan	(809) 769-9509